

**Notice of Allowability**

Application No.

09/988,030

Examiner

John D. Lee

Applicant(s)

SARGENT, EDWARD H.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on October 18, 2004.
2. ☒ The allowed claim(s) is/are 1-10, 12 and 14-23.
3. ☒ The drawings filed on 18 October 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
John D. Lee  
Primary Examiner

### **EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE**


The following is an Examiner's Statement of Reasons for Allowance: All of the independent claims have been amended to recite the limitation that the effective bandgap properties of the quantum well active region are modified by rapid thermal annealing for controlled diffusion of defects into the quantum well active region. As acknowledged by the Examiner in the previous Office action, the Yamamoto reference does not disclose or suggest this claim limitation. In the previous Office action, the Examiner suggested that it would have been obvious to utilize this modification technique (as taught by Thompson et al) in making the Yamamoto semiconductor optical amplifying element. After studying applicant's response, however, in which applicant disputed this conclusion of obviousness, the Examiner must agree that the previously suggested modification would *not* have been obvious to a person of ordinary skill in the art. Yamamoto does not have any embodiments in which a process such as defect diffusion takes place after creation of the quantum well structure. Only control of the current applied to the quantum well is used to modify the optical gain spectrum of the quantum well structure. In contrast, the technique taught by Thompson et al (rapid thermal annealing for controlled diffusion of defects into the quantum well active region) is a part of the formation process for the quantum well device. There is no reason why a person of ordinary skill in the art would have found it obvious to change the formation technique in Yamamoto in order to achieve an effect which is achieved in a totally different manner therein. The previously asserted position of obviousness of the Examiner is therefore incorrect, and the previously applied rejections are withdrawn.

Art Unit: 2874

Additional search by the undersigned Examiner has uncovered no additional relevant prior art. Claims 1-10, 12, and 14-23 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning the merits of this communication should be directed to Examiner John D. Lee at telephone number (571) 272-2351. The Examiner's normal work schedule is Tuesday through Friday, 6:30 AM to 5:00 PM. Any inquiry of a general or clerical nature (i.e. a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562, to the technical support staff supervisor (Team 8) at telephone number (571) 272-1564, or to the Technology Center 2800 Customer Service Office at telephone number (571) 272-1626.

  
**John D. Lee**  
**Primary Patent Examiner**  
**Group Art Unit 2874**